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FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

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CANINE PRACTICE.

There is no doubt that canine practice has suffered a good deal owing to the war, and will continue to do so. It is worth our while to consider the effect of the war upon this branch of our work with some precision, both as regards the duration of the war, and the period of economic stress that must follow it.

Speaking roughly, we may not unfairly divide dog-owning clients into two classes. One is the dog fancying fraternity—those who, sometimes for pleasure alone and sometimes with an eye to profit also, keep valuable pedigree dogs. These are the clients who are generally most valued by veterinary surgeons who specialise in canine practice, and they are also those whom the war will most diminish. The income we draw from them is already much less than it used to be, and its decrease will continue. Dog-fancying will be at a discount for some years at the very least; and veterinary surgeons must make up their minds to a great—perhaps an enormous—decrease in the fees it used to yield them. This will affect some practitioners very severely; but there are many others to whom it will make little difference.

The second class is a much larger one numerically; and, though individually its members are generally less profitable clients than dog fanciers, the income we draw from them collectively is greater. Many people who keep dogs as household pets—usually only one at a time and that one often of little monetary value—now seek our services for them. Some may not do so now so often as of old; but there are solid grounds for prophesying that a great deal of our practice amongst them will continue. There is a growing public recognition of the moral obligation upon people who keep animals to care for them properly, a growing perception of the superiority of qualified to unqualified services, and a knowledge that veterinary surgeons are now willing as well as able to treat dogs—which has not always been the case. All these reasons will retain us much of our connection with clients of this class. For some years they will be less profitable to us than they once were, but probably not very much less; and they will regain their old value in time.

All things considered, the outlook for canine practice is far from discouraging. One part of it will diminish greatly and perhaps permanently; the other will decline much less, and then recover. Though it may never again be quite so remunerative as it has been to specialist, it will remain one of the important departments of general practice.

SEAWEED FOR HORSES.

I was much interested in the note from *Horse and Hound* on this subject published in last week's issue of *The Veterinary Record*.

When in the Isle of Man three years ago, I noticed a bay van gelding belonging to a bathing machine proprietor eating seaweed with apparent relish. The seaweed was partly dry and had been left on a pebbly beach by the receding tide. I asked the owner how long the horse had evinced a liking for seaweed, and he told me it had eaten it regularly in fairly large quantities during the bathing season for five years. The condition of the animal was good, and the seaweed was eaten without the admixture of any other food and without being chopped up.

It seemed surprising to me that the bromine and iodine in the seaweed had apparently done the horse no harm whatever.

G. MAYALL, M.R.C.V.S.

SUCCESSFUL TREATMENT OF PLEURISY BY INJECTIONS OF AIR.

Bouchet has recorded this case (*Bullet. de la Soc. Cent. de Méd. Vét.*) The subject was a horse, in which pleurisy was diagnosed with certainty from dulness of the inferior third of the thorax on both sides.

Thoracentesis was practised on the right side, 200 grammes of fluid were withdrawn, and then, by means of Potain's apparatus, 200 c.c. of air was blown into the pleural cavity. Another 200 grammes of fluid was then withdrawn and another 200 c.c. of air blown in, and this procedure was continued until the whole quantity of fluid, amounting to five litres, had been withdrawn. A desiccative application, consisting of Croton oil in ether, was then rubbed into both sides of the chest. In the evening the temperature was little altered, registering 100.7° F.; and the pulsations were 45, and the respirations 25 per minute.

The next day, and the day after that, the line of dulness had risen again, but without attaining its former level.

Three days after the first thoracentesis, a second one was practised upon the left side; and three litres of fluid were drawn away and replaced by three litres of air. In the evening the temperature was 101.1° F., the pulse 42, and the respirations 22. The next day the general condition was better, the breathing had become easy, and the dulness scarcely reached half its original level.

Four days after the second thoracentesis a third was made, in which 850 grammes of fluid were taken

away, and one litre of air was injected. In the evening the temperature was 101.1° F., the pulse 40, and the respirations 18. In the succeeding days the condition visibly improved, and the appetite was good. The author then, for eight days, gave some digitalis in order to strengthen the heart.—(*Berliner Tier. Woch.*)

The Bacteriological Investigation of the Lungs in suspected Anthrax.

Eugen Stemmer, of Berlichingen, recommends that, when pieces of tissue are being sent to a bacteriologist to be tested for anthrax, pieces of *lung* should be sent in addition to pieces of spleen. In packing the pieces of lung for transport, he advises the avoidance of air-tight flasks, and the use of paper, hay, or other substance permeable to air as a packing material. Fresh pieces of lung (up to four days old) may be used for the *microscopical* demonstration of Anthrax bacilli, though the spleen is more suitable for this purpose. In the case of older material, pieces of lung and of spleen are used together for the preparation of agar plate cultures. In this case heating of the material for 25 to 30 minutes at 60° C. to 65° C. is requisite, so as to destroy any sporeless putrefactive germs present. The agar plate culture is preferable to the streak culture. The nature of the original infection—that is, whether it was by feeding or inoculation—has no influence upon the cultural results.—(*Berliner Tier Woch*).

The Castration of the Rabbit.

S. László has published an article upon this subject (*Allatorvosi Lapok*). The operation is desirable when it is necessary to keep a number of male rabbits together in one cage, as otherwise they quarrel and damage each other's skins by biting. The castrated rabbit is more peaceable than the uncastrated one, developes more quickly, and has a better coat. The operation is best performed at the age of from five to six months.

The following is the author's procedure. He points out that the scrotum and the testicles (which are elliptical in shape) are situated under the anus, and that the cremaster muscle is very powerful, enabling the animal to often draw the testicles high up during the operation. After securing the animal, the testicles must be seized very quickly and held fast, or else they are drawn up towards the abdominal cavity, and are only recovered again after a long time. The scrotal skin is cleansed with alcohol, and the testicles are exposed by two longitudinal incisions, after which the two spermatic cords are placed together in the emasculator and cut through. The stumps of the spermatic cords should be pushed back into the scrotum with the object of obtaining quick healing. After the operation the animals should be placed in clean cages. After-treatment of the wounds is unnecessary.—(*Berliner Tier. Woch.*)

Descent of Omentum after Castration.

F. Müller, of Lilienthal, has recorded a case of a colt, fifteen months old, in which the omentum became prolapsed, not immediately after castration, but five days subsequent to the operation. The mishap was probably caused by the colt being chased in the meadow by a strange dog.

About a foot of omentum was hanging out from the castration wound. Müller cut away the hanging part close up to the castration wound, disinfected the castration wound, and then, working with his hand in the rectum, drew the remaining omentum as far as possible back into the abdominal cavity. The colt remained lively and free from fever, and the case proceeded to an uneventful recovery.—)*Berliner Tier Woch.*).

W. R. C.

CENTRAL VETERINARY SOCIETY

[National V.M.A. Southern Branch.]

The ordinary monthly meeting was held at 10 Red Lion Square, London, W.C., on Thursday, February 3rd, Mr. W. R. Davis, President, in the Chair.

The following Fellows signed the attendance book:—Messrs. Nicholson Almond, W. Roger Clarke, Jas. Fulton, G. S. Heatley, R. C. Irving, W. S. King, J.W. McIntosh, W. Norman, E. Lionel Stroud, Thompson, Prof. G. H. Wooldridge, and Mr. Hugh A.MacCormack, Hon. Sec. Visitor: Lieut. P. Connolly, A.V.C.

On the motion of Mr. Almond, seconded by Mr. E. Lionel Stroud, the minutes of the previous meeting were taken as read and confirmed.

A letter regretting inability to be present was received from Major F. J. Taylor.

Specimens.

Prof. Wooldridge exhibited the uterus of a hermaphrodite pig. It was discovered by Mr. Jones, of Towyn, when spaying some six-months-old pigs. The specimen showed at one end a tiny ovary and at the other a well-developed testicle. Hermaphroditism in the pig appeared to be not uncommon, but a case was always of sufficient interest to bring forward. He had no history of what the external genitals were like, but they must have been obviously those of a gilt, or the animal would not have been spayed.

Mr. Almond suggested that sections should be made to see the structure, as external appearance might be misleading.

Prof. Wooldridge said he did not think that was likely. Sections would spoil the specimen for museum purposes.

The President thought there was little doubt that it was a testicle.

Prof. Wooldridge said there was clear epididymus upon it.

Mr. G. S. Heatley exhibited the foot of a horse that was bought for army purposes. The animal was between 16 and 17 years old and had four greasy legs, and was subject to repeated attacks of spasmodic colic. He informed the War Office that he thought it very desirable that the horse should be put down, as he was evidently not fit for any work. He was in great agony, and for a considerable time was lying down. He died suddenly, a *post mortem* examination revealed that he was in a very depleted condition. The foot was found in his box and he was standing on the the stump of the leg. There was blood oozing all round the coronal band. The os pedis had been fractured. The War Office took no notice of the request to have the animal destroyed. He himself had no doubt that neurectomy had taken place before the horse was sold. The animal did not appear in any pain until the foot sloughed off. There was no swelling and the animal appeared all right in the coronet until the foot was found.

The PRESIDENT thought there was very little doubt that it was a case of neurectomy. He believed the horse had been suffering from laminitis before he was bought. It showed how animals that had had an attack of laminitis were unsuitable for neurectomy. It seemed extraordinary that anyone responsible for buying horses for the Government should purchase such an animal.

Mr. R. C. IRVING said perhaps it had not been noticed. A horse could be very greasy sometimes.

Mr. HEATLEY said the horse had been standing for about a month and was never able to do anything. He could not say whether it had been brought in from another depot or was a new purchase.

Prof. WOOLDRIDGE said that would make a big difference, because if it happened to be one that was bought in the first rush there might be some reason for the purchase. One could hardly conceive of such an animal being purchased in recent times, when more opportunity was given for examination.

Mr. Irving said a great many horses were bought in the beginning of the war without being examined at all by a veterinary surgeon.

Mr. HEATLEY said the horse had evidently been treated for sidebone or corns.

Mr. N. ALMOND mentioned a case of an accident to a cart-horse which was run into by a motor car with the result that the frontal bone was fractured. There was distinct motion of the skin inward and outward as the horse breathed. Whether there were detached pieces of bone he could not tell, but on moderate pressure on the skin surface the bone could not be felt in the centre within the radius of the size of a two-shilling piece or half-a-crown. It was a question whether resection should be made or not, but he took the conservative view and left the case to nature. There was merely an abrasion of the skin, which was not broken, and that was dusted with an antiseptic powder. The horse was kept quiet for about a week, and ate and drank, and showed no symptoms, and was then allowed to go to work. The accident occurred about the 10th December last, and the horse had been working ever since all right, the pulsations had entirely ceased, and there was no evidence of any trouble with the sinuses of the head. The question he wished answered was as to the probabilities of the case in the future. He thought that if there were any trouble coming it would be probably through the falling down of the fractures in the frontal sinus and possibly nasal trouble. The owner would like to get some allowance for depreciation in value, and it was rather a ticklish point as to what depreciation, if any, had taken place, and whether it would be safer to settle the matter at the present time. The horse was worth about £60 at the time of the accident and was not insured. It made no noise in its breathing.

Mr. IRVING said he had had a similar case in a van horse. The animal got perfectly well for the time being, but about five months afterwards commenced to make a noise in his breathing and became so bad that he had to be destroyed. After his accident he went back to work in about three months. There was no trouble between the time of the accident and the time of putting him to work, and he might have been put to work a little bit earlier.

Prof. WOOLDRIDGE asked whether there was any hæmorrhage from the nostril. [Mr. ALMOND: No.]

Prof. WOOLDRIDGE said that made a considerable difference. It seemed to imply that there was no internal wound and therefore very little prospect of infection, and if there was no infection the chances of complete recovery were greater. In some cases it was not possible to say how long the pieces of bone, if they were asceptic, would take to work their way out. In Mr. Irving's case the injury appeared to be distinctly lower down, mainly involving the nasal bones rather than the frontal. There could be a thickening of the frontal bones without interfering with the breathing. The complication of some spicules of bone eventually detaching themselves and discharging themselves internally was a risk, but since there was no hæmorrhage the probabilities of that were not quite so great as they would otherwise be.

Mr. ALMOND said the abrasions were painted with Tincture of iodine as soon after the injury as possible. There were no signs of brain symptoms or any symptoms whatever. When the animal went to work he had a special arrangement made so that the band of the bridle did not press on the part.

The PRESIDENT remembered a similar case a good many years ago in a mine pony. It was run into by a truck, and the frontal bone was fractured, without any very great damage to the skin. The animal recovered perfectly, and there was no trouble during the two years he knew him. There might be a fracture without producing spiculae at all, and the bone would unite with connective tissue filling up the interstices.

Mr. MCINTOSH said, in a horse of such value he thought the owner was entitled to a certain amount of depreciation. There was no doubt there was a possibility of some future development as a result of the injuries, and he would have no hesitation in making a small claim.

Mr. ALMOND said another point was whether there should be a settlement now or whether one should wait for six months.

Mr. MCINTOSH said he should make the understanding clear now. If left six months the chances were much more remote.

REPORT ON PECULIAR DEATHS IN CATTLE.

J. D. FULTON, M.R.C.V.S.

Mr. President and Gentlemen,—Some time ago our Secretary asked me if I would oblige with a paper at one of our monthly meetings. Although quite willing to accede to his request—as a young member of the Association and also of the Royal College—I felt some diffidence in reading a paper before older and more experienced men than myself.

At our last meeting we had various discussions, more or less impromptu, on different cases, and it was my wish to bring forward the report I am about to read; but as time was limited, Mr. MacCormack suggested that I should postpone it until this meeting.

On Monday, 29th November, I was asked to make a post-mortem on a red and white bullock about two years old, which was found dead in a field where it had been grazing with some others.

I went to the field, examined the carcase, but found no discharges.

Before opening the animal, cut off the ear, and made a microscopic examination of the blood, to see if there was any sign of anthrax. After preparing three or four slides and examining them, there seemed to be no trace of bacilli. Returning to the field later in the day I proceeded to make a post-mortem.

I had the abdominal contents taken out, and first examined the contents of the rumen, but it did not seem to contain anything beyond grass and a large quantity of oak leaves. I opened the other stomachs and found them to be perfectly healthy. The intestine along all its course was healthy; it showed no sign even of congestion and was quite a normal colour. The spleen was also normal. The liver showed signs of fatty infiltration. The kidneys had a fair amount of fat round them and were quite healthy.

The contents of the thorax were likewise healthy. I was quite at a loss to know what was the cause of death.

Case 2. This occurred some six days later. The animal was found ill in a field—two fields away from the

one in which the first bullock died. When I arrived there the animal was down. I tried to get him up. He made the attempt but had not the power to do so. He was grunting and groaning, and evidently in pain. Previous to my arrival he had been given a red cattle drench.

I thought the best thing to do was to give him some medicine to act on the bowels quickly, thinking that there might be some poisoning, but before it had time to act the animal died.

A post-mortem was made and, as in the previous case, the rumen contained grass and oak leaves, and the other post-mortem signs were similar also.

I made enquiries as to whether they had any yew or other poisonous plants about the place, but was told there were none.

After this I wrote a letter to the owner explaining the cases, and suggested that, should any other deaths occur, an expert's opinion be obtained. To this he agreed.

Case 3. Exactly a week later I was called to the same farm to see a white nine months old bullock, which had that morning been found by the cowman with his head up against a wall and grunting. He immediately reported it to the bailiff, who sent for me.

By the time I got there—within a quarter of an hour—the animal was dead.

The strange thing about this case was, that it had never been out of the large loose box from the time it was weaned, and was in no way connected with the two previous cases.

The carcase of the beast was opened and revealed exactly the same as the others. A consultant was sent for and came the next day, and he can bear out my statement that the internal organs were healthy, with the exception of the liver, which was slightly fatty.

In cutting into the superficial muscles of the fore and hind quarters, they seemed the normal hue; but on cutting into the deeper muscles—especially the deep pectoral—they were found to be deeper in colour.

Being excised the smell did not seem altogether healthy.

Part of this muscle was taken away by the consultant, and a letter from him, two days later, said that the bacillus of black-quarter was found by microscopic examination. He advised that all young cattle up to two years, should be inoculated with double vaccine.

This was done; but only two days later another calf of the same age was found in the same condition as Case 2.

This young bull was with other 12 or 13 in a large stockyard where it had been turned out after it was weaned, and had never been in contact with Case 3.

The post-mortem findings were the same as in the others.

Note. The first two cases were being simply grass fed. The third and fourth were receiving hay, chaff, and a few toppings.

Case 3. This beast had been castrated some twelve days previous. On post-mortem the operation wound was perfectly healthy and was healing kindly.

Replying to Mr. Almond, Mr. Fulton said the serous membranes of the abdominal and thoracic cavities were examined and found absolutely healthy. The temperature of the second animal was quite normal, or perhaps a little below normal.

Mr. ALMOND said he had in mind some very mysterious cases which he had to examine twenty-five years ago. They were young animals which, in a very very hot season with very little herbage, had been feeding upon a mixture of bracken and other food. The bracken was used for littering the animals, but as food became extremely scarce a certain amount of bracken was mixed with the ordinary food, and the animals fed for some time without any harm, but as the quantity of bracken was increased disease broke out amongst them.

The deaths were preceded by symptoms which he was afraid he had forgotten. The cases were puplished in the *Journal of Comparative Pathology and Therapeutics* at the time. The symptom which struck him was the extremely high temperature before death, 108 and 109, lasting for some time, and the post mortem symptom which attracted most attention was the large petechiæ under the serous membranes.

With regard to the third animal that died, he understood it was castrated about a fortnight before death. He supposed the possibility of the cases having been quarter ill would probably have occurred to the Fellows although the usual symptoms were not present, but one of the symptoms in the third case, the extravasation or darkening of the muscles in certain parts of the body, seemed to point to quarter ill or black quarter. Another symptom usually found in the later cases of quarter ill was the subnormal temperature. Although in the early stages there was an elevated temperature, the temperature was usually normal or subnormal some time before death. He would like to know whether the animals were inoculated and if so with what result.

Mr. FULTON said there had been no further deaths since the inoculations were carried out at the beginning of December.

Prof. WOOLDRIDGE said he happened to be the one who examined the third beast, and he could corroborate exactly what Mr. Fulton had said with regard to the complete absence of any abnormality in the viscera. The animal was dead, unfortunately, when Mr. Fulton arrived, and no temperature could be taken. On reflecting the skin, both the hind quarters and the fore quarters showed practically nothing, but on cutting deeper into the tissues and reflecting the shoulder there was a very dark appearance of the muscles, particularly the pectoral muscles, and on cutting into the intercostals they were found to be still darker. The pleura was perhaps slightly more pink than normally, but there was no indication whatever of any pleurisy. He examined a piece of the intercostal muscle with a view to discovering any organisms that might be present, and the black-leg bacillus was easily demonstrated. Moreover, the muscle had the absolutely characteristic smell, resembling rancid butter. Black-leg was one of the few conditions which a blind man could definitely diagnose by the sense of smell. He reported to Mr. Fulton that in his opinion the death of that beast was due to black-leg and that it was an atypical case. That might be different, of course, from the other animals. It was a younger animal than the two first, and a little younger than the fourth, which was not ill at the time he was there. Whether the others died from black-leg or not he would not give an opinion. In the fourth case it was noteworthy that Mr. Fulton, having reason to suspect that condition, made an examination of the muscle tissue and found no darkening of the muscle. It was even possible that the third case might not have been due to the same cause as the others. With regard to the condition of the operation wound, that was apparently running a normal course. There was just a little discharge from the scrotum, but otherwise it appeared to be what would be expected in ten or twelve days when healing had not gone on rapidly. He enquired on the spot the history of the previous cases and as to previous existence of any outbreak of disease or obscure deaths and found nothing to help him in that way. He had no hesitation whatever in expressing the opinion as to the cause of death in the third instance, although the others seemed to be a mystery.

Mr. MCINTOSH said, from the description given by Mr. Fulton he had very considerable doubt as to whether any of the cases was black-leg. He had had an oppor-

tunity of seeing a considerable amount of black-leg when in country practice, and had invariably been able to discover evidence of a fairly definite nature.

In some cases deaths were extremely rapid, but apart from this he could not recall in all his experience an outbreak bearing any similarity. As a rule an observant stockowner would notice some sign or symptom of a more or less characteristic nature, such as isolation, stiff movement or actual lameness, and if he came to closer quarters he would probably be able to detect the emphysematous character of the local lesions which, he thought, were invariably present. In any case, he thought it very unlikely to have five consecutive cases without something of a more definite nature being observed. He had not noticed any marked abdominal symptoms further than those of discomfort and general uneasiness which he thought peculiar to most ailments.

In the casesdescribed there seemed to be a considerable amount of abdominal pain, and it appeared to him from that alone that something of a poisonous nature was affecting the animal through the digestive organs. It was possible to get this effect without any marked post-mortem lesions being produced in the viscera. With regard to the third case, Prof. Wooldridge's remarks had proved conclusively the presence of the bacillus of black-quarter, but were it not for those remarks he would be inclined to think that the third case suffered from malignant œdema following castration. Was there not a possibility of mistaking the bacillus of malignant œdema for that of black-quarter?

Prof. WOOLDRIDGE thought they were very easily distinguished.

The PRESIDENT asked whether malignant œdema affected cattle.

Mr. MCINTOSH said it did. The deaths were certainly very mysterious, as in none of the cases did he think there were typical symptoms of black-quarter either before or after death.

Prof. WOOLDRIDGE quite admitted that.

Mr. MCINTOSH said the discovery of the bacillus of black-quarter was, of course, positive proof of its existence in one particular animal, and it certainly looked as if the same cause had been operative in all the cases. In quarter-ill abdominal symptoms were not very common, and the flesh, in animals that were killed in the early stages, apart from the local lesion might be quite normal in character. Even an expert could not tell that the animal had suffered from black-leg if the portion affected had been removed.

The PRESIDENT did not think the diagnosis of black-leg was as simple in a great number of cases as Mr. McIntosh seemed to think. It was said not to occur in animals under about six months old, but he had seen black-leg affecting sucking calves, and had also seen a case in a heifer in calf nearly three years old. Now and then he had met cases something like those Mr. Fulton had described, which he had put down to black-leg after a *post mortem*, on a farm where black-leg was common.

Prof. WOOLDRIDGE understood that the first part of Mr. McIntosh's statement referred to the opinion he would have held before he (Prof. Wooldridge) had made his statement, and not the view he held subsequently. The organisms whose existence was proved, were found in the intercostal muscles, and not near the seat of the operation. With regard to the simple course taken by black leg, anyone who had had any experience of country practice realised that the disease did not always run a typical course. With a typical case there was absolutely no trouble whatever in diagnosis. One reason he had for particularly examining the muscles in those areas was because in an outbreak he had to investigate early last year, where a number of calves were dying off quickly, in some of the cases the quarter muscles of the hind limbs and the fore limbs were not affected, but the pectorals and the deep shoulder muscles were affected, and that made him alive to the likelihood of it occurring in subsequent cases. In that instance he was able to trace the outbreak to the death of a sheep that had occurred on the place. The sheep had been skinned, and parts of the carcase had been thrown about for dogs, quite irrespective of the fact that the muscles of the limbs were discoloured. He had seen the disease in the abdominal muscles of a three weeks old lamb, due to umbilical infection. In connection with the outbreak he had mentioned, some of the calves were actually found dead without having shown any symptom whatever, so that the fact that symptoms might be observed for a day or two was not a thing that could be relied upon.

Lieut. CONNOLLY said Prof. Wooldridge's remarks went a long way in clearing up any difficulties in connection with the cases. The third case was peculiar in that the animal was reared in the place where it was seen. He had had a very wide experience of black-quarter in cattle, and had seen a case in a calf six weeks old, and also in well-nourished animals up to two years old. As a rule, it was a disease affecting animals on the approach of spring when the herbage was soft and nutritious, and when animals ate an overdose of immature herbage. The discovery of the bacillus of black-quarter in the third case, which had never been out at pasture or in contact with other animals, was very peculiar. Once he was called to attend a case of red-water in a cow in Cornwall. There was not a blade of grass within two or three miles of where the animal had been fed, the district was a mining one—and from a calf, it had been fed indoors, but no doubt the germs of red-water had been carried to her in the food or by the attendant. The oak leaves found in the stomachs of the first two cases, made him consider the cases to be stomach or head staggers.

Mr. ALMOND said that when he was in a black-quarter area, he used to have a few cases of what he called enteric black-water, in which the animals were found dead with no external lesions. Like the President, he had met with cases of black-quarter in animals up to 3 and 3½ years old.

Mr. FULTON, in reply, said the castration wound was perfectly healthy. He used a chain. The animal went on well, and the other was still alive and doing well. They had been twice inoculated with a double vaccine, and since then there had been no other case. It was said that black-quarter occurred in healthy and plethoric animals, but the beasts he referred to were grass-fed, and were very plain animals. It seemed peculiar that one case should occur in a field, and the other five days afterwards, two fields away from the first one. With regard to the possibility of stomach staggers, the first animal was dead, and the second one was perfectly conscious but appeared unable to get up. He quite agreed that infection could be carried by the feet. Cases Nos. 3 and 4 were fed by the cowkeeper, who was never near the two previous cases. His work was to look after the inside cattle, and not those in the fields. As far as he could make out, there had been no known cases of black-quarter for years on the farm or in the district, and there had been no sudden deaths before. He believed what Prof. Wooldridge had said, but it seemed to him rather strange that the bacillus of black-quarter should be clearly seen—per microscopic examination, and yet no symptoms of the disease shown prior to death.

Prof. WOOLDRIDGE said the point raised by Mr. Mc Intosh as to the fitness for food of animals dying of black-leg was an important matter. It was not suggested that a human being could be in any way affected with the organism of black-leg, and there was no doubt that in the case of animals found affected by the disease and slaughtered in time the flesh had been frequently

used for human food without any ill results, and gave no sign whatever, in the majority of cases, of the animal having been affected with black-leg. In some few cases, where there had been a rise of temperature, the tissues might be a little softer than they would be in a normal animal. Although such food had been eaten, and without ill results, he thought veterinary surgeons ought not to countenance such a thing being passed, nor should they say that such carcases were fit for human food. When a person bought calf's flesh for food he was ostensibly buying something which was healthy, and if it could be shown that the animal had been affected with black-leg he believed damages could be obtained, apart from any injury to the purchaser, because the material supplied was "not of the nature and substance demanded" by the consumer. It was the carcase of a febrile, diseased animal, and should not be put on the market under any circumstances, even though it could not be detected that black-leg had been present. Mr. McIntosh had said he would defy anyone to detect from the flesh that an animal had had black-leg; he would defy Mr. McIntosh to detect from the flesh that an animal had been affected with miliary tuberculosis, but that fact did not render it fit for food.

Mr. McINTOSH said he did not suggest for one moment the use of the flesh of animals that had been killed in the early stages of the disease, but what he did say was, that it was frequently used, and was used still as a food. If he knew an animal had suffered from the disease he would never recommend it, but if he could not detect it, and the character of the flesh was normal, the veterinary surgeon was under no further obligation, and he had not known of any case where harm had resulted from its use.

Mr. FULTON said that previous to castrating the two beasts, the bailiff told him that some years ago they had a number of calves castrated—he thought about a dozen—and ten of them died shortly afterwards.

The PRESIDENT said he had never heard of a veterinary surgeon losing calves after castration.

Mr. MACCORMACK said he had lost three on one farm.

On the proposition of Mr. Almond, seconded by Mr. Stroud, a vote of thanks was accorded to Mr. Fulton for his interesting cases.

A vote of thanks to the President closed the meeting.

HUGH A. MACCORMACK, Hon. Sec.

THE NORTH OF SCOTLAND VETERINARY MEDICAL SOCIETY.

[NATIONAL V.M.A.—SCOTTISH BRANCH.]

The Half-yearly Meeting was held in Marischal College, Aberdeen, on Saturday, January 28th, Mr. Duncan Cumming, President, in the chair.

The following members were present:—Messrs. Anderson, Brown, Beattie, Clerk, Howie, Kerr, Murray, Morrison, Niven, Robson, Sievwright, and Skinner.

Apologies for unavoidable absence were received from Messrs. Crabb and McPherson.

The minutes of the last meeting and of a meeting of the Council of management were read and approved.

New Member. Mr. G. S. Mower, Rhynie, was proposed by Mr. Kerr, seconded by Mr. Brown.

The Secretary read a letter from Mr. Fred Bullock, joint secretary of the Anglo-Franco-Belgian Veterinary Relief Fund. After discussion, Mr. Sievwright moved and Mr. Anderson seconded, that the Secretary be empowered to send £2 2s. from the Society.

PRESIDENTIAL ADDRESS.

Mr. DUNCAN CUMMING.

Gentlemen,—Allow me to express to you my thanks for having elected me as your president for the ensuing year. It is with some diffidence that I undertake the duties and responsibilities of office, knowing how many able gentlemen have occupied the chair in the past. However, I will endeavour to do my best for our Society during my term of office, and respectfully ask the support of every individual member. I am already assured of the hearty support and co-operation of our valued Secretary to whom the society owes so much, and I would ask the presence of every member at our meetings. In my opinion any little trouble or inconvenience one has in getting away from his work is well repaid. Personally I look forward with pleasant anticipation to meeting my fellow members, and I always learn something from the papers and discussions, and the social intercourse is very enjoyable.

I had the pleasure of attending when a student the meeting called for the formation of this society, and have since been a member during the most of my professional life. I have watched how it has grown in strength and influence. I recollect our first endeavour to obtain more liberal recognition of our services to the local authorities, but the results were not very encouraging; and adversity only acted as a stimulus to our endeavours. The matter was tackled again and now we can look with pardonable pride on what has been achieved and the financial benefit we now enjoy.

We were all very glad to learn that the Government has now placed our profession on the same footing as the sister profession with regard to the rebate on the motor spirit tax, though not yet on the motor licences, but if we keep pegging away I have good hopes that even that will be granted at no distant date.

What has been done must surely convince the greatest individualist amongst us that if we want to advance we must unite and go forward as a body.

It is customary for a new president to make some remarks on current events affecting the profession. The gigantic struggle in which the nation and her allies are at present engaged has overshadowed everything else; the energies of the country are at present centred on the task of conquering a formidable and unscrupulous enemy. Let us hope that before the year 1916 closes we will have gained a glorious and honourable victory so that the peace of Europe may be assured, that the progress of science and industry for the good of mankind may proceed uninterruptedly in the future.

I am proud to say that our profession has done and is doing its duty with credit to itself and profit to the country, and I sincerely hope that at our next January meeting we will be able to accord a hearty welcome to the members of our own society who have so patriotically given their time and skill to the country in her hour of need.

Our retiring President in his opening address gave a very interesting and instructive paper on the changes which had taken place in the profession with regard to the prevention, diagnosis and treatment of disease during the past twenty-five years. The profession has advanced most satisfactorily when we consider that it has done so unaided by Government or other financial assistance.

We are all sorry to see that the Royal College, to enable it to keep afloat, is likely to have to study economy at the expense of efficiency.

It is very difficult to prognose as to our prospects in the near future once the country is again enjoying peace. I am far from being a pessimist, but I have no doubt that we will be affected along with other bodies.

Public Health authorities will have to study the financial means at their disposal, and fewer appointments in this field will be open to our members. Still, we have got the most valuable agricultural stock in the world which it is our special province to look after in health and disease. The stockowner has now learned to appreciate the services of the veterinary surgeon in his herd when there is trouble, rather than the advice of his so-called skilful neighbour. On the whole our prospects for the future may be regarded as fairly cheerful.

The thought has often occurred to me "is the country getting the full advantage of the skill possessed by our profession?" A leading agriculturist said to me one day, "we stockowners are not getting the assistance from your profession which we are entitled to expect considering what is being done by the medical profession for the human species." Gentlemen, I am afraid we must admit there is some truth in it. What is the cause of this condition? I say specialisation by medical men and surgeons! Consider what our doctors would do were they scattered as sparsely over the country as we in the north are, and no infirmary or hospital to send their poorer patients to, or nursing homes for their more wealthy ones, even although the average conditions they work under are more favourable for major surgical operations and their patients more easily handled than ours. I am afraid many more of their cases would have less favourable terminations than they have under present conditions, when the poorest can be speedily transported to the nearest hospital and have the advantage of the specialised skill of men who have made a life study of particular ailments. I am convinced that until we get something like the same advantages many valuable animals will be lost, not from want of the proper treatment, but because that treatment is handicapped by the surroundings of the patient. What we have to strive after is a properly equipped veterinary hospital in a central position to which we could send our patients when their condition is such that the attending veterinary surgeon cannot do justice to himself or his patient. I think most of you will agree that this state of things is not by any means rare in a busy practice. There are plenty of men who have a special aptitude for certain work. Some for surgery, some with a special faculty for diagnosis and medicinal treatment, and I have no doubt that if we had the place and the appliances the right men would be forthcoming.

Gentlemen, it is not customary to discuss a presidential address, but I would like if you would give this matter your consideration it might be discussed at some future date.

SOME NOTES ON ANTHRAX.

By D. CLERK, M.R.C.V.S., Stonehaven.

The prevalence of Anthrax in Aberdeenshire tempted me to introduce it as a subject for discussion, as I want some information.

My notes resolve themselves into two questions. The first is, "What symptoms are to be seen in animals suffering from anthrax?" My experience in the living animal is very limited, and I think I can best answer the question by describing a few cases.

Case I. You will excuse me for going into details in this case, for my diagnosis was wrong.

Subject. Black polled yearling heifer.

History. She was one of a herd grazing in what the owner called "The Den"—a deep hollow with a marshy bottom. She was found one morning standing apart from the rest of the herd, was very dull and unwilling to move, in fact, she had to be pushed along all the way home. During the journey she passed urine which the owner said was like stout. I saw her about five o'clock that afternoon: she was very dull with the head carried low; rigors well marked, and a temperature of 102.6° F. When made to walk, which she was very unwilling to do, she showed lameness on right hind leg. I drew off the urine, and it was exactly like what we get in a case of redwater. At four o'clock the following morning the owner found her, as he said, at her last gasp. So he bled her, and sent for a butcher to take off the skin and open her up.

A few hours later I saw the carcase and was surprised to find a typical anthrax spleen, and petechial spots everywhere inside the carcase. The capsule of both kidneys, especially the right, contained a quantity of reddish-yellow fluid. Taking into account the condition of the urine, the comparatively normal temperature, and the nature of the ground where the animal was grazing, I came to the conclusion that it was a bad case of redwater. Is it possible or probable that the two diseases were co-existent?

Case II. A two-year-old fat bullock was seen to be unwell about mid-afternoon. I saw him at nine p.m. His temperature was 107° F., with slight rigors present. Occasionally he kicked at his belly with his right hind foot indicating abdominal pain. Further than what I thought to be an anxious expression on the face, there were no other symptoms noticeable. He died at 7 o'clock next morning.

Case III. A two-year-old bullock: Symptoms much the same as in Case II., only the pain was more acute—the animal rising and lying, kicking at the belly, and moving off one hind foot on to the other, and sweating. He lived only a few hours after he was seen to be ill.

Case IV. A milk cow. I did not see this case during life, and simply mention it as interesting to me for the time the illness lasted—she was ill from midday on Saturday until Monday morning. The case would probably never have been reported but for the fact that the owner had two cases on the farm before.

The second question is—"Do animals recover from an attack of anthrax?"

About 14 or 15 years ago the then travelling inspector for the Board of Agriculture and Fisheries asked me that question, and I remember giving a decided answer that they do not. His reply was that a Professor well known in the veterinary profession said they do recover. Were I asked the question to-day my answer would not be so decided. Cases crop up now and again where the symptoms resemble those of Cases II. and III., but whether they are anthrax or not I do not know.

There is one farm in particular where I had three such cases one winter lately. All three were bullocks heavily fed on cake, corn, etc., and exhibited much the same symptoms. Nothing much was seen wrong in the morning, we will say, eating as usual and cudding, but by midday refused all food, dull, with a temperature of 106° F. Symptoms of slight pain and occasional tremors or shivering. In from two to four days they recovered, and there was no further trouble.

Now, Gentlemen, I will be glad to hear your opinions and have the benefit of your experience.

DISCUSSION.

The PRESIDENT: We are all indebted to Mr. Clerk for bringing before the meeting a subject of so much importance to country veterinary surgeons. I now invite discussion on the points brought out.

Mr. NIVEN: I think recovery in cases of anthrax possible. I have on more than one occasion had a case of anthrax and found the stall companion of the dead animal showing a temperature of 107.8° F., and well marked rigors. Treated with Carbolic acid and Turpentine the case recovered.

Mr. BEATTIE: I would like to thank Mr. Clerk for his notes. I also am of opinion that anthrax is curable occasionally. In Case I. it is quite possible that the kidneys were affected with anthrax.

Mr. ANDERSON: I am very much interested in Case I. I have on several occasions had anthrax cases showing red urine, but always associated with a high temperature. I really cannot say if the disease is curable or not. When dealing with anthrax cases, one often finds several animals exhibiting high temperatures. I find that these usually recover spontaneously. I have had recoveries in cases treated with carbolic and turpentine.

You will get cases of anthrax hanging on for four or five days before death occurs. This was not observed thirty years ago. I don't think treatment with carbolic acid and turpentine is of any importance, as many cases will recover without treatment.

Mr. SIEVWRIGHT: I would like to thank Mr. Clerk for his interesting notes. Case I is peculiar in being associated with redwater. Cases treated with internal antiseptics are often successful, whether the drugs are of any benefit or not. I would like to know how to distinguish the bacilli of anthrax from those of malignant œdema.

Mr. ROBSON: I congratulate Mr. Clerk on his paper. I think diagnosis of anthrax during life hardly possible. As to treatment, a client of mine had four cases of anthrax. Other three showed the same symptoms. I treated them with Sodium hyposulph. and all three recovered.

Mr. KERR: I had a heifer with a temperature of 107 and rigors. I gave turpentine in oil. Next morning the temperature was normal and the patient well. Case I is interesting. If I got a case with a temperature of only 102°, I would not like to call it anthrax. I had one case ill for a week before death supervened.

Mr. BROWN: I am greatly indebted to Mr. Clerk for bringing up some very important points. Regarding the diagnosis of anthrax during life, we have not sufficient data to work on. All you see are symptoms of fever and rigors. The first case is most important. The remarkable thing is the low temperature; two diseases may have been running together. I think Mr. Clerk's diagnosis was quite excusable.

Do animals recover? It is a doubtful point, but there is no reason why they should not, as the blood inhibits, if it does not destroy the growth of bacilli: but if anthrax bacilli once gain access to the blood stream death is rapid.

For treatment I would try Turpentine, Carbolic acid, Lugol's solution, and Soda hyposulph. Regarding Mr. Sievwright's question about malignant œdema—the bacillus of this disease is found in the soil, and is in the intestines of all animals. After an animal dies from anthrax, the anthrax bacilli use up all the oxygen in the blood, so that the bacillus of malignant œdema gains access to the blood stream and thrives there. If the carcase is some time dead, one often gets a mixed infection as a result of this invasion. The best stain is McFadyean's, and it is almost a diagnostic. You get the bacilli stained nearly black, while there is the peculiar pinkish purple debris surrounding them, and with an opening between. The bacilli are roughish in outline, while in malignant œdema the bacilli are smoother, fewer in number, and do not stain so darkly. I don't think it is wise in doubtful cases to give an absolute diagnosis at the farm, as one has neither the time nor appliances for a minute examination.

Mr. SKINNER: Regarding the curability of anthrax, I am a living monument to the fact that it is curable in man. I was unfortunate enough to be infected one day, but my medical man managed to attack the disease before it became a general infection, therefore I am here to tell the tale. In Mr. Clerk's Case I., I am of opinion that the redwater was a result of anthrax. The low temperature was probably due to the fact that Mr. Clerk got his case at a late period of illness when the vitality was at a low ebb. I once examined a carcase which had been treated for redwater by another veterinary surgeon for three or four days: I found on microscopical examination that it was a case of anthrax.

Mr. MORRISON: I have had a large experience of anthrax in cattle, horses and dogs, and I don't think diagnosis is difficult if you get fresh samples of blood. If the case is two or three days old, you may get confused between anthrax and malignant œdema. During life any man may be mistaken in his diagnosis as far as cattle are concerned, but with horses there is no difficulty, as you always get the throat symptoms. I once took a blood sample from a horse three hours before death, but found no bacilli.

Mr. HOWIE: I am very much indebted to Mr. Clerk for bringing forward such an interesting series of cases. Regarding Case I., it is quite possible that the red urine was due to anthrax localized in the kidneys, and that the low temperature was due to the late stage at which he got his case, when the animal was sinking fast. As to the possibility of cases recovering from anthrax, I think it is quite possible if you can attack your disease before infection becomes general. I am quite certain that I have had many cases of recovery if my diagnosis was correct. When one gets a death from anthrax in a byre, and finds probably the stall companion with a temperature of say 106° and still feeding well, what can he call it—if not some form of anthrax? I always depend on turpentine and oil, and generally find that the temperature is normal next morning and the animal feeding.

The PRESIDENT: I think it is quite impossible to diagnose anthrax during life, and Mr. Clerk is to be pardoned if he did not diagnose Case I. correctly. Treatment may have no effect, but I know that cases do recover when given doses of Turpentine and internal antiseptics. Some of the high temperatures may be due to heavy cake feeding, especially when getting swedes at same time. I have tried to get anthrax bacilli in the blood before death—but have failed. From this I would reason that the lesion is local until a very short time before death. When it does once gain the blood stream, the bacillus of anthrax must multiply at an awful rate.

Mr. CLERK: I have to thank you, Gentlemen, for your kind reception of my notes, and for your discussion. I am inclined to agree with Mr. Anderson that the low temperature in Case I. was due to lowered vitality, and I am aware that some cases of anthrax will linger on for days. I had a case in which the farmer physicked and gruelled, a cow for three days which, on death, was found to be anthraxed.

PARTURIENT REDWATER.

By ALEXANDER NIVEN, M.R.C.V.S., Inverurie.

Mr. President and Gentlemen,—When Mr. Howie wrote me that he was depending on me to open the discussion on some subject for this meeting I thought he should have asked some abler and more experienced member to do so.

I have chosen Parturient Redwater for various reasons. Since I started practice I have seen a good few cases of it, and I have had encouragements and disappointments in the treatment. I have tried many means of combating it, but my chief object in bringing it up here to-day is to encourage a discussion. It is approaching the season of the year in which I meet practically all my cases, and I have no doubt every member practising in in the north has seen it very often—oftener, I presume, than he wished. Speaking personally I like it ill, from any point of view, for the reason that I never seem to know where I stand in regard to it.

Now one can never say for certain that he can cure any disease, but with parturient redwater one seems always to be groping in the dark. I have at times thought that I had found a specific for it, but when my

next case proved fatal under the same treatment I saw that success had not been mine.

Parturient redwater is a hæmoglobinuria of newly-calved cows, generally occurring after calving up to three weeks; after that period a cow is considered safe. The more severe forms arise soon after calving. In some districts it appears in a mild form, while in others it assumes a very severe form.

Generally speaking, the first indication of anything being wrong is that the urine froths when it falls. Diarrhœa follows, and the fæces come away through a very contracted and puckered anus, as if the anal muscles could not relax. The pulse is slightly altered, and I have never seen the temperature raised, not even in a case seen very early in the attack. As the disease advances the appetite suffers, rumination becomes less regular, and the cow becomes dull. The diarrhœa stops and constipation sets in, and the pulse becomes more frequent. There may be some yellowness of the mucous membranes and skin; in numerous cases I have not seen the latter, but I remember a case in which both were well marked. The urine is distinctly red by this time. If the disease progresses, the urine becomes redder and redder, and finally almost black. Milk is not entirely suspended, but when it is allowed to settle one finds a reddish sediment at the bottom of the milk pail. I have often noticed the absence of any colouring in the milk.

The bowels become still more constipated, ears and extremities cold, and a very noticeable feature ere this stage is reached is the highly excited heart's action and pale mucous membranes, in fact, one could safely diagnose a case of purturient redwater by these two symptoms, without ever seeing the highly-coloured urine: I remember in my first two or three cases being rather alarmed by the action of the heart. In a few fatal cases I have had distinct brain symptoms, brought on, I suppose, by anæmia of the brain. Necrosis of the extremities often takes place, but latterly I have not seen so much of this condition. If death of the distal parts of any of the legs takes place it is often best to have the patient slaughtered.

The diagnosis is very simple, in fact to my mind it is the only simple thing about the disease. You have the highly-coloured urine, excited heart action, diarrhœa, and if case is well advanced, constipation, pale mucous membranes and no fever, and the fact that the cow has recently calved.

Etiology.

The etiology of the disease is very important from our point of view, for until we get at the cause of any disease we can never get a specific for its cure. The cause was one time thought to be injudicious feeding on turnips, too much sugar in the food, bad drainage and cultivation of the soil, and there is no doubt we see less of it as the years pass by owing to improved methods of farming.

Nowadays it is generally recognised by the profession that the disease is Bovine Piroplasmosis, a disease caused by a parasite in the blood—the *Piroplasma Bovis*. About ten years ago, owing to the great similarity between Texas Fever and this disease, the blood of affected animals was examined by Nocard, Mettam and Montgomery. This led to the discovery of the *Piroplasma Bovis*. The parasite is transmitted from animal to animal by inoculation and the transmitting agent is a tick. The ticks in the British Isles are the *Ixodes Ricinus* and *Hæmophysalis Punctata*, and they are found in the grass and bushes in rough, low-lying land. On the ground they do not travel far, hence redwater is confined to certain districts. They attach themselves to cattle at either stage—larval, nymphal and adult. In either condition they become attached for from three to five days, and gorge themselves with blood, after which they drop off. When on the ground, the female lays eggs in about a week, the number varying from 100 to 1000. The time taken for the development of the tick depends upon the conditions of temperature and moisture, and the presence of a suitable host. The eggs, larvae and nymphae, may hibernate during the winter; it usually requires five months for the life cycle, and the tick may transfer the disease at either stage. It ingests the virulent blood from an infected animal, and this virulent material being retained in the succeeding stages of the tick probably undergoes some as yet unascertained changes. The virulent material is inoculated into the next host, and if the host be a susceptible animal redwater results. After recovery from redwater the animal has a high degree of immunity but still retains the piroplasm which will infect a susceptible animal if inoculated in quantity.

Now, do we all agree that parturient redwater is a piroplasmosis? Speaking for myself I cannot say that it is not, but parturient redwater differs in some of its features from the ordinary redwater of bovines. I have come across only a limited number of cases of the non-parturient form, and each case I have seen had a high temperature and was mild in degree, when compared with the parturient form that I have met with. Still, in Hoare's System of Medicine it is said that in cases of parturient redwater, where the disease has been thoroughly investigated the piroplasma bovis has been found in the red blood corpusclos. I remember Mr. Brown telling me that he demonstrated the piroplasma bovis in the blood of a redwater case when he was practising at Banchory, and if I remember rightly it was not of the parturient form.

Should we not see more of the ordinary redwater in districts where we see such a lot of the parturient form? Also, is it not a queer coincidence that it attacks cows about two weeks after calving? Ten to fourteen days is the usual time; I think perhaps two or three years ago there was a dearth of turnips in my district, consequently the cattle had to be fed on other foods, principally grain, and its offals. I had hardly a case the whole of these spring months; while next year, when there was plenty of turnips—in fact more than plenty, I had numerous cases. This was very striking and remarkable.

I have never seen or heard of a case of ordinary redwater in which gangrene of the extremities was present. I have several times seen this in parturient redwater. I have seen a cow recover from the disease with the phalanges gone and standing on the ends of metacarpals and metatarsals. Several times I have seen the tail and tips of the ears gone.

In ordinary redwater it is said the attack is sudden, while in the parturient form no one could say the attack or onset is sudden. If observant, one notices no dulness in the early stages of the parturient form, in fact a cow will be ruminating and looking distinctly well when the urine is red. Also in the latter the diarrhœa precedes the constipation, while in the former the opposite is the case.

The post-mortems differ also. I have several times made post-mortem on parturient redwater carcases: the muscles are so pale that one would suppose that the animal had died from hæmorrhage. They had also a yellowish appearance, with degeneration of the liver and kidneys, while in the other form you find extravasations of blood and small petechiæ and constant enlargement of the spleen. It is quite possible, however, that the two diseases are similar as regards their etiology, only that the parturient form is more severe and certainly more fatal.

Treatment.

The treatment is, from a country practitioner's point of view, most important, and I suppose everyone here

has a form of treatment of his own. In the first place, if the cow is feeding on turnips, and especially if they have their tops, I discontinue them immediately and give a little oilcake, bran and oats, and hay if oat-straw had been given previously, and pay particular attention that no food of any kind is allowed to be in front of the patient. Of course, in a goodly number of cases when the disease is well advanced and appetite and rumination gone one requires to give stimulants in some form: I generally give gin, ether, porter, eggs and milk. The medicinal treatment I have tried has been very varied. Principal Dewar, who must at one time have seen and treated a large number of cases, and who also did a large amount of work in the pathology of this disease, used to tell us that he never found iron of any use in combating the disease unless in the convalescent stage. Strange to say I have great faith in a mixture of Tinct. ferri perchlor, 1½ ozs., and Ac. sulph. dil. ½ oz. I have had recoveries from a powder containing Pot. nit., Pot. chlor., equal quantities. I have used Quinine in four-dram doses, and Pot. chlor. alone. Friedberger and Fröhner recommend alum, tannin, and acetate of lead. I have tried Adrenalin in two-dram doses with bad results. Of course, I give laxatives from the start of the treatment, but not in purgative doses: I rather repeat the dose than give a large quantity to start with. If one sees a case early enough a dose of Epsom salts, treacle and ginger will effect a cure without further treatment Under those various treatments you will understand I have had failures as well as recoveries.

Lately, Nuttall, of Cambridge University, has recommended Trypan blue as a specific against redwater. The dose used is 100 c.c. to 200 c.c. of a 1 % solution of the drug in water. One dose is sufficient to effect a cure, but if improvement does not result no second injection is of any avail. The Trypan blue colours the tissues and causes a temporary discolouration of the skin over the body to a deep blue. It appears to have a destructive effect on the Piroplasmata. It seems to have little effect when given by the mouth, and it acts more rapidly and satisfactorily given intravenously than when given subcutaneously.

Trypan blue should be dissolved as required, as the solution does not keep.

Perhaps I may be behind the times, but I have never tried this method, for when one meets with a fair amount of success with any one form of treatment he is loath to try anything new. We will always be handicapped in changing our treatment owing to the lack of experimental animals and to the enhanced value of them at the present time.

If anyone has been useing the Trypan blue treatment I should like to hear with what results.

Now I have said enough, I think, and if I have managed to inspire a prolific discussion I shall be pleased.

Discussion.

The President called for a hearty discussion of Mr. Niven's most excellent paper.

Mr. Brown: I would like, in the first place, to congratulate Mr. Niven on the quality of his paper. I was very pleased to see in the agenda the title of his paper, as I have been exceeding interested in this subject for a long time. Mr. Niven gave an excellent description of the symptoms of parturient redwater. There are two types of redwater: in the north of Scotland we meet with both varieties. If there is an abundance of turnips and badly harvested straw you can with confidence predict a parturient redwater year. In the piroplasma form you have always a temperature, while in the parturient type there is no rise. The former always starts with constipation; the latter with diarrhœa. In parturient redwater you very seldom get the piroplasma in the blood. I think the red corpuscles are broken up by something toxic in the food; therefore, I regard it as a digestive disease. As a preventative give bran and cake for a fortnight before calving. When you see brain symptoms develop the case is invariably fatal.

Treatment depends on the stage at which you are called in. In the early stage, when the water is frothy but not very red and the bowels loose, give two bottlesful of Linseed oil with Turpentine; but later, no medicine should be given. If there is constipation a little oil or salts and treacle should be given as a laxative. Give plenty of stimulants, strong coffee, and two pints of Bass three times a day. Pot. nit. and Pot. chlor. are used medicinally. Trypan blue I have used quite a lot. It certainly does good in the piroplasmic form, given in one dose only. In the partnrient form I am not so certain of its efficacy: I have had fairly good results with it, but whether due to Trypan blue or the other treatment used at same time I am unable to say. Redwater in freshly imported Irish cows is often due to the piroplasma, as much of the grazing land in Ireland is ideal for the growth of the tick.

Mr. Kerr: I have had a good many cases of redwater in my time: the parturient form is most fatal. I have tried many drugs in its treatment. I give salts in small doses, common salt is very good. I have seen red herring well boiled and given juice and all tried. I have tried Adrenalin chlorid. without good result. Stimulants I regard as indispensible. I intend to try the Trypan blue treatment when I get a chance. I would like to ask a question—Is the flesh of a redwater carcase fit for human food? I don't think it is.

Mr. Robson: I am glad to say that in my district I see very little of this disease. I treat with eggs, milk, stimulants, Pot. nit. and Pot. chlor. I don't think a redwater carcase is fit for food. I regard parturient redwater as a very fatal disease.

Mr. Sievwright: I get in my district redwater of both types, and it is really a vexed question whether they are both due to one cause or not. I am inclined to think they are two separate diseases. I have tried almost every remedy. Adrenalin at one time promised to be a specific, but now I regard it as unreliable. If your cow is three weeks calved before the onset of the disease, she has a good chance of recovery—if under two weeks, little chance.

Mr. Anderson: I have very little to add to what has already been said. I have had a long experience of the disease, and think it would be a good thing to get the cause definitely settled. Personally, I think the two diseases are distinct; I have never known of the piroplasma bovis being found in the parturient form. I am of opinion that an excess of turnips has a good deal to do with it; at any rate cows fed on large quantities of turnips take the disease readily.

Mr. Beattie: I think the disease is dietetic in its causation: this is shown by the diarrhœa in the early stages. For treatment I rely on stimulants—eggs, stout, milk, and Liq. ferri perchlor. fort.

Mr. Skinner: My experience of parturient redwater is that it is dietetic in origin. You always see most of it when there is an abundance of turnips and a scarcity of straw. It is due to derangement of the liver, kidneys, and blood. Those animals attacked early after calving almost all die. The longer the interval after calving the greater the chance of recovery. I do not believe in giving large doses of salts: I prefer treacle as a laxative. I give stimulants—whiskey in large doses along with eggs and milk. I have had the best results from Liq. ferri perchlor., followed up with Ammon. carb. in the convalescent stages. Most of the fatal cases are due to syncope or heart failure. When you get a weak and fluttering pulse nothing is so good as large doses of neat whiskey. I don't think a redwater carcase should be passed as fit for human consumption, as it is bilious and anæmic.

Mr. MORRISON: I have little to add to what has been already said. It is well named the poor man's disease. I consider it purely dietetic and not contagious. I had a remarkable recovery in one case—a cow took redwater on the day of her calving, and I was astonished that she pulled through. I think it is a mistake to give large doses of purgatives: treacle is best as a laxative. Medicinally, I pin my faith on Liq. ferri perchlor. fort. and Hazelin, along with stimulants and nutrients.

Mr. CLERK: I have not had, I am glad to say, much experience of this disease except one year. I must have been fortunate in having a mild type, as I don't regard it as a very fatal ailment. I give salts, treacle, and stimulants. Adrenalin did all right with me. One thing I have observed is, that the temperature is often subnormal.

Mr. CUMMING (President): My experience is pretty much the same as that of the rest of you. I have had two or three cases previous to calving, and one had it three times during the winter. Those cows had in the summer-time been grazing in a marshy hollow: I took these cases to be of the piroplasmic type.

REPLY.

Mr. NIVEN: I have to thank you, Gentlemen, for your discussion. My chief object in bringing this subject forward was to get information. The etiology of the disease is as yet uncertain, but I am fully convinced that the two diseases are quite distinct. You do not get Piroplasmata in the blood in parturient redwater cases. Carcases should not be passed for human food. I think the gist of the discussion points to stimulants—Iron, Sulphuric acid and Quinine, as being the treatment most generally adopted.

Mr. BROWN asked the members to accord to Messrs. Cumming, Clerk and Niven a hearty vote of thanks for so splendidly contributing to the success of the meeting. This was heartily awarded.

Mr. BEATTIE undertook to provide pabulum for the next meeting.

Mr. KERR drew the attention of the Society to an advertisement in the daily papers in which a druggist of the name of Byth designated himself as a veterinary chemist.

The Secretary was instructed to communicate with the Secretary of the Royal College on the matter.

After the meeting, the members adjourned to the Athanæum Restaurant, where they lunched and enjoyed a pleasant hour together.

GEORGE HOWIE, Hon. Sec.

ARMY VETERINARY SERVICE.

WAR OFFICE, LONDON, S.W.

Extract from *London Gazette*,

WAR OFFICE, WHITEHALL, Feb. 17.

REGULAR FORCES. ARMY VETERINARY CORPS.

Temp. Lieuts. to be temp. Capts.:—J. McL. Stuart (Feb. 4); J. H. G. Jerrom (Feb. 6); C. Nicholson (Feb. 8).

Temp. Lieut. J. Legg relinquishes commn. on rejoining Forces of Commonwealth of Australia (Nov. 26).

Feb. 19.

Temp. Lieut. to be temp. Capt.:—F. T. Barton (Feb. 9).

To be temp. Lieuts.:—T. Woods (Feb. 8); W. Sewell (Feb. 9).

Feb. 21.

Major to be temp. Lt.-Col.:—W. B. Edwards (Feb. 6).

Capt. (temp. Maj.) H. C. Stewart relinquishes his temp. rank on ceasing to be employed as Asst. Dir. of Vet. Services of a Division (Feb. 23).

Feb. 22.

To be temp. Lieuts.:—J. J. O'Neill, P. A. Carroll (Feb. 9).

(Feb. 23).

Temp. Lieuts. to be temp. Capts.—T. S. Hunter (Nov. 6); H. T. Hislop (Jan. 11); K. J. Urquhart, L. L. Steele, D. Pollock (Feb. 10); W. G. Sharpe (Feb. 12).; L. H. MacQueen (Feb. 13).

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

Feb. 17.

Capt. W. Awde, F.R.C.V.S., is granted temp. rank of Maj. whilst holding the appmnt. of Asst. Director of Vet. Services (Jan. 23).

Feb. 21.

Capt. to be Major:—C. H. Golledge (Jan. 24).

To be Lieut.:—T. M. Timoney (Feb. 22).

Feb. 22.

To be Lieut.:—J. F. D. Tutt (Feb. 23).

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.		Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
		Out-breaks (a)	Animals.	Out-breaks (a)	Animals.	Out-breaks (b)	Animals.	Out-breaks (b)	Animals.	(b)	Out-breaks (a)	Slaughtered. *
GT. BRITAIN. Week ended Feb. 19		10	15		7	2	6	79	179	10	67	240
Corresponding week in	1915 ...	17	18			1	1	‡	‡	6	62	175
	1914 ...	12	12	1	4	3	4	64	102	5	63	487
	1913 ...	15	16			1	1	90	165	10	29	280
Total for 8 weeks, 1916		102	110	1	24	12	38	734	1885	127	608	1934
Corresponding period in	1915 ...	141	158			6	9	‡	‡	102	624	2591
	1914 ...	149	162	1	4	18	42	679	1298	102	423	3786
	1913 ...	103	116			27	85	689	1504	89	267	3136

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities. † Counties affected, animals attacked:—Kent 4, London 1, Fife 1.

Board of Agriculture and Fisheries, Feb. 22, 1916.

Horses in Ancient Times.

Explorations point to the fact that early in the life of the human race, or during the Palæolithic or Stone Age, wild horses were abundant in Britain, France and Belgium, and were probably killed and eaten. In some parts of France enormous quantities of bones of horses and reindeer have, at various times, been found. Horses seem to have been the easiest to secure, judging from the fact that their bones at these particular stations formed a huge rampart, estimated to contain the remains of about four hundred thousand animals, the long bones of which had all been broken for their marrow. Came the Neolithic Age, and found the horse the slave of man—no longer an animal whose chief purpose seemed to be the furnishing of food for man, the conqueror. Also by this time the horse had become a valuable ally in war. This war-horse was very small, probably dun-coloured, and unquestionably shaggy-haired. It bore a close likeness, in fact, to the present-day wild horse of the Gobi Desert known as Prijwalsky's horse, which may indeed be regarded as the descendant of these ancient horses.

Donations to R.C.V.S.

The Secretary of the Royal College of Veterinary Surgeons begs to acknowledge the receipt of the following donations for 1916 to the College funds:—

Mr. W. Packman, Bury	£1	1	0
Mr. W. Woods, Wigan	1	1	0
Lieut. W. Shipley, A.V.C. (S.R.)	1	1	0
Mr. J. F. Maguire, Liverpool	1	1	0
Mr. F. Morton Wallis, Halstead	1	1	0
Amount previously acknowledged	21	0	0
	£26	5	0

OBITUARY

J. A. R. Towers, M.R.C.V.S.
Graduated, N. Edin.: Dec. 1890.

Mr. Towers died at King's Lynn on February 9th, aged 47.

Harry Young, M.R.C.V.S., Withdeane Grange, near Brighton. N. Edin.: April, 1883.

Death occurred on February 13, aged 58 years.

William Robert Emery, M.R.C.V.S., Guildford.
Lond.: April, 1879.

Mr. Emery died at his residence, 168 High Street, Guildford, on Tuesday last, 22nd inst., from pleurisy, after a prolonged illness, aged 64 years.

Wragg.—On the 18th inst., at 4 Vernon Chambers, Southampton Row, Alice Sarah, widow of Francis Whitfield Wragg, F.R.C.V.S., in her 70th year. Interred in West Hampstead Cemetery.

Corpl. John Gibson, Leicester Yeomanry.
R.V. College, Camden Town. Killed in Action, Feb. 6th.

Mr. and Mrs. G. E. Gibson, Highfield House, Oakham, have received the distressing intelligence that their eldest son, Corpl. John Gibson, of the Leicestershire Yeomanry, was killed in action in France, on Feb. 6th. The news was conveyed in letters from the Chaplain of the Regiment, and Capt. Hanbury, in command of A Squadron to which Corpl. Gibson belonged, and the utmost sympathy will be accorded Mr. and Mrs. Gibson and family in their loss. Corpl. Gibson, who was only twenty years of age, was educated at Oakham School, and at the time of the outbreak of the war was attending the Royal Veterinary College, London. He had been in the Leicester Yeomanry for two years before the war, and upon the mobilisation of the forces when war was declared, he left his studies, and joined his regiment, with which he proceeded to France about October, 1914. He had had leave once since that period. Corpl. Gibson was one of the few who came out unhurt of the great battle of Ypres, on the 13th May. He was a smart soldier in every way, and was greatly respected by all who knew him. A memorial service was held in Oakham Parish Church.

Mr. and Mrs. Gibson have another son, Corpl. Wm. Gibson, in the Army Veterinary Corps.

VOLUNTARY SUBSCRIPTIONS TO THE R.C.V.S.

Sir,—The necessity for financial help to the R.C.V.S. is more apparent now than it has ever been. The question is one that concerns us, both individually and collectively. Times have changed greatly since the last general appeal for funds was made to the veterinary electorate. There is a chance now of both benefiting the R.C.V.S. and the country by timely response to an appeal for funds to the whole of the profession. Retrograde steps, when efficiency is more than ever needed, are doubly lamentable. We do not agree with "X.Y.Z." that an appeal for funds is not necessary. We think it ought to be made as evidence at this time of crisis that all that can be done to save the position has been done.—Yours truly,

G. Mayall.

Sir,—Your correspondent X.Y.Z. has overlooked the fact that two members of Council have already subscribed to the College Funds—Messrs. T. S. Price and W. Shipley, *vide* your issues of Feb. 5 and 12. Also I may point out that although he does not see the necessity for an appeal from the Council, there are very many of us who consider it the proper course for the Council to take.—Yours, etc.,

Com. Southton.

The Central Veterinary Society.

A GENERAL Meeting will be held at 10 Red Lion Square, W.C., on Thursday, March 2nd, at 7 o'clock. Agenda.—Routine business; Specimens. "The significance of vomiting in animals," by the President. Fellows are specially requested to bring specimens and report interesting cases.

Hugh A. Mac Cormack, Hon. Sec.

TOWN and country practice in a splendid agricultural district in one of the best dairying counties in England. Corporation and County Council appointments; old established; average returns for the last nine years between £500 and £600; central premises, rent only £35, can be worked with a motor cycle. Full investigation and introduction given. Address, 5012 V.R., 20 Fulham Road, London, S.W.

CLASS C Student desires post as locum or assistant during Easter holidays. Well up in general practice; steady, willing to work. Motorist. Address, 4024 V.R., 20 Fulham Road, London, S.W.

M.R.C.V.S. wanted immediately to manage a country practice near Blackpool, Lancashire. Live in and able to ride a bicycle. Must be steady and practical. State terms and send references to J. R. Gaulter, Solicitor, 62 Adelaide Street, Fleetwood.

[*Late Advts.*]

EXCERPT FROM MINUTE OF PUBLIC HEALTH COMMITTEE, GLASGOW, OF 7TH JANUARY, 1916.

The Veterinary Surgeon submitted his annual report, which was read to the meeting, and the following is a copy :—

Abattoir, Greenock, 7th January, 1916.

Gentlemen,—I beg to submit the following particulars as to the work done under the Veterinary Department for year ending 31st December, 1915 :—

Weight of Carcases Destroyed.

	Tons.	Cwts.	Qrs.	lbs.
Tubercular ...	16	1	1	8
Other Diseases ...	4	11	3	10
	20	13	—	18

527 butchers' premises were visited and inspected. In six of these meat was seized and destroyed.

260 byres were visited and 4065 cows examined. One cow with tubercular udder was slaughtered.

8 cruelty cases were investigated. In two cases proceedings were taken and convictions obtained. In another case animal was destroyed.

5 suspected cases of swine fever were dealt with, necessitating over thirty visits to premises. One outbreak was confirmed and owner convicted. Another case is still in the hands of the Board of Agriculture.

The Veterinary Surgeon pointed out the marked decrease in the number of carcases of cows totally seized for tuberculosis. He explained that in his opinion this was accounted for by the increase of minimum price before animals could be insured, and by the good effects of the Tuberculosis Order, which is meantime suspended. These circumstances led to a better class of cows being slaughtered, and not to any change in the methods of inspection.

	Tuberculosis.					Other Diseases.		
	Number Slaughtered.	Number Affected.	Percentage Affected.	Carcases Seized.	Parts Seized.	Carcases Seized.	Parts Seized.	Organs Seized.
Bullocks ...	3,092	344	11·12	1	10	7	4	759
Bulls ...	325	110	33·84	3	3	2	1	230
Cows ...	1,376	914	66·42	42	78	18	2	1,996
Heifers ...	690	127	18·41	6	9	4	—	238
Calves ...	1,430	5	·35	3	—	37	—	20
Swine ...	2,129	293	13·76	11	—	8	6	696
Sheep ...	22,149	1	·005	1	—	25	4	131
	31,191	1,794		67	100	101	17	* 4,070

* Organs of carcases wholly seized not included.

Veterinary Societies—Addresses.

BORDER COUNTIES V.M.S.
Pres: Mr. H. BARROW, M.R.C.V.S., Ireby, Carlisle
Hon. Sec: Mr. R. Craig Robinson, M.R.C.V.S., Carlisle
Meetings, Second Friday of Feb., June, and October

GLASGOW V.M.S.
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Hon. Sec. Mr. J. D. Fulton, 83 Buccleuch Street, Glasgow

ROYAL VETERINARY COLLEGE V.M.A.
Pres: Prof. E. Brayley Reynolds.
Hon. Sec: Mr. B. Gorton, M.R.C.V.S. *Assist.* Mr. P. R. Turner

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Hon, Sec. & Treas. Mr. A. M. Trotter, M.R.C.V.S., Moore Street, Abattoir, Glasgow

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Hon. Sec: Mr. Trevor Spencer, M.R.C.V.S., Kettering

MUNSTER VETERINARY INSPECTORS' ASSOCIATION
Pres: Mr. D. M. Barry, M.R.C.V.S., Mallow
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Meetings, Second Tuesday, Wednesday, Thursday, and Friday alternately in Feb., May, Aug. and Nov

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Meetings, Third Friday, Feb., May, Aug. and Nov.

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Pres: Mr. Hugh Williams, M.R.C.V.S., Ty Croes
Hon. Sec. Mr. L. W. Wynn Lloyd, M.R.C.V.S., Carnarvon
Meetings, First Tuesday, March and September

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Victoria Road, Darlington
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122 St. George's Avenue, Tufnell Park, N.
Meetings, First Thursday in each month, except August and September, 10 Red Lion Square, Holborn, at 7 p.m.

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New Buckenham
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Hon. Sec & Treas: Mr. Tom Hicks, M.R.C.V.S.,
Boston Road, Sleaford
Meetings, Second Thursday Feb., June, and October

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Meetings, Last Friday, Jan., April, July and Nov.

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Hon. Sec: Mr. A. H. Archer, M.R.C.V.S., Southsea, Portsmouth
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Meetings, Third Thursday, March, July and November

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Treas; Mr. J. F. Healy, M.R.C.V.S., Midleton

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Hon. Sec. & Treas: Mr. G. Howie, M.R.C.V.S. Alford, Aberdeen
Meetings, Last Saturday in January and August

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Hon. Sec. & Treas: Mr. Jas. Henderson, M.R.C.V.S.,
Public Health Dept., City Chambers, Edinburgh

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19 Bank Street, Hillhead, Glasgow
Hon. Treas: Mr. Geo. W. Weir, M.R.C.V.S.,
88 Crookston Street, Glasgow
Meetings, Second Wednesday, May, Oct. and January.